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(54) Title: **RADIOLABELED COMPOUNDS AND COMPOSITIONS, THEIR PRECURSORS AND METHODS FOR THEIR PRODUCTION**

(57) Abstract: Positron emitting compounds and methods of their production are provided. The compounds have the formula: (F)_m G (R)_n wherein each R is a group comprising at least one carbon, nitrogen, phosphorus or sulfur atom and G is joined to R through said carbon, nitrogen, phosphorus or sulfur atom; G is silicon or boron; m is 2 to 5 and n is 1 to 3 with m + n = 3 to 6 when G is silicon; m is 1 to 3 and n is 1 to 3 with m + n = 3 to 4 when G is boron; and wherein the compound further comprises one or more counterions when the above formula is charged; and wherein at least one F is ¹⁸F.

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